

Design parameters

This appendix lists a set of parameters which set an upper bound on certain system capacities by design. Changes to these parameters generally require a revision to the software, are constrained by other basic capacities, such as memory, and constrain other capacities such as traffic or system load. They have been set to provide the best possible balance between these two limits.

System parameters

Table 116
System parameters

System parameters	Maximum value	Comments
customers	100	
display messages for background terminal	255	
input/output ports (e.g. TTYs, printers)	16	each MSDL counts as one device; a history file counts as one device
AML/CSL links	16	with MSDL
TNs	64kB	software design limit, actual number of TNs will be constrained by physical capacity, real time, memory, and ISM limits

Customer parameters

Table 117
Customer parameters

Customer parameters	Maximum value	Comments
Tenants	512	
Dial Intercom Groups	2046	
Members per Dial Intercom Group	100	
Ringing Number Pickup groups	4095	Call Pickup Group 0 = no pickup group
Listed Directory Numbers (direct inward dialing only)	4	
DISA DNs	240	

Console and telephone parameters

Table 118
Console/telephone related parameters

Console/telephone parameters	Maximum value	Comments
consoles per customer	63	
lamp field arrays per customer	1	may be repeated once on another console or SL-1 telephone
lamps per array (all numbers must be consecutive)	150	
feature keys per attendant console		
M1250	10	
M2250	20	
incoming call indicators per console	20	
trunk group busy indicators per console		
M1250	16	
M2250	20	
additional key/lamp strips		
console	2	
SL-1 telephones	6	
add on modules		
M2x16	2	
block length available for features by X11 release		
R16	240	
R17	234	
R18	234	
R19	234	
R20	230	

Trunk and route parameters

Table 119
Trunk and network related parameters (Part 1 of 2)

Trunk/network parameters	Maximum value	Comments
trunk routes per customer	512	
members per trunk route	254	
RAN trunks per RAN route	10	
trunk access restriction groups	32	
locations in an ESN network	256	
basic authorization codes	4096	
length of basic authcode	14 digits	
network authorization codes	20,000	ESN networks
length of network authcode	7 digits	fixed length defined per customer
NCOS		
CDP	3	
BARS/NFCR	7	
NARS/NSIG/AUTOVON	15	
route lists		
CDP	32	
BARS	128	
NARS	256	
route list entries	32	

Table 119
Trunk and network related parameters (Part 2 of 2)

Trunk/network parameters	Maximum value	Comments
NFCR trees	255	New Flexible Code Restriction
IDC trees	255	Incoming DID Digit Conversion
ISDN D-channels	64	with MSDL
ISDN B-channels per D-channel	382	16 T1's with a D-channel and backup D-channel, subject to members per trunk route limitations and physical limitations
	or 359	15 T1's with a single D-channel, subject to members per trunk route limitations and physical limitations

ACD feature parameters

Table 120
ACD feature parameters

ACD parameters	Maximum value	Comments
ACD DNs per customer	240	
agent positions per DN	1200	real-time and physical capacity constraints may limit this further, especially for an option 21E
agent priorities	48	
agent IDs per customer	9999	
agents logged in at one time per system	999	real-time constraints may limit this further
CDNs per customer	240	
AST DNs per telephone	2	
number of ACD-ADS customers	5	

Special feature parameters

Table 121
Non-ACD feature parameters (Part 1 of 2)

Feature parameters	Maximum value	Comments
speed call lists per system	8191	
number of DNs in speed call list	1000	
multiple appearances of the same directory number	30*	limited by watchdog timer * see steps in a hunting group
steps in a hunting group	30*	marketing objective, limited by watchdog timer * in combination with MADN, each hunt step with more than 16 appearances is counted as two, so the maximum combination of MADN and hunt steps is 30 MADN and 15 hunt steps
number of Call Party Name Display names defined	variable	limited by the number of DNs defined and available space in the Protected Data Store
CPND length		
SL-1 protocol	27	software design limit
ISDN protocol	24	display IE limitation (DMS switches have a display IE limit of 15)

Table 121
Non-ACD feature parameters (Part 2 of 2)

Feature parameters	Maximum value	Comments
AWU calls in 5 minutes	500	marketing objective, constrained by ring generator
Group Call Feature groups per customer	64	
stations per group	10	
BRI application		
protocol parameter set groups per system	16	
terminal service profiles (per DSL)	16	
DSLs	32kB	software design limit, actual number is constrained by the number of TNs in the system: each DSL occupies 2 TNs
LTIDs	640kB	software design limit, each DSL can have a max of 20 LTIDs; the max number of LTIDs is limited by the number of DSLs, memory, and real time

Hardware and capacity parameters

The software design limits are not typically the binding constraints. The number of items of a particular type is usually determined by a combination of loop and slot constraints, if the item requires loops, or slot constraints alone.

Table 122
Physical capacity/hardware related parameters

Physical capacity/hardware parameters	Maximum value	Comments
TDS cards	64	software design limit, each TDS card requires 2 loops
conference cards	64	software design limit, each CONF card requires 2 loops
multifrequency sender cards	64	software design limit, each MFS card requires 2 loops
XCT cards	64	provides TDS, CONF, and MFS functionality, requires 2 loops (TDS and MFS share timeslots on one loop, CONF uses the other loop)
total service and terminal loops		
Option 21E	12*	* or a channel capacity of 7 Superloops, although option 21E systems are limited by physical slots rather than time slots
Option 51	16	
Option 61	32	
Option 71	160	
Option 81/61C/51C	160	
		each ENET card requires 2 loops
		each XNET card requires 4 loops
		each MISP card requires 2 loops
digitone receivers	255	software design limit
multifrequency receivers	255	software design limit
tone detectors	255	software design limit

Memory related parameters

Table 123
Memory related parameters (Part 1 of 2)

Parameters	System type				
	21E	51	61	71	81
low priority input buffers	96–1000	96–1000	96–1000	96–1000	96–5000
high priority input buffers	16–1000	16–1000	16–1000	16–1000	16–5000
input buffer size (words)	4	4	4	4	4
500-set, trunk and digital set output buffer size per PS card (messages)	16–1000	16–1000	16–1000	16–1000	16–5000
SL-1 set output buffer size per PS card (messages)	16–255	16–255	16–255	16–255	16–255
message length (words)	4	4	4	4	4
D-channel input buffer size (bytes)	261	261	261	261	261
D-channel output buffer size (bytes)	266	266	266	266	266
TTY input buffer size (characters)	128	128	128	128	512
TTY output buffer size (characters)	2048	2048	2048	2048	2048
number of call registers (65 words per call register)	26–2047	26–2047	26–2047	26–5000	26–20,000
call registers assigned to SL-1/AUX	26–255	26–255	26–255	26–255	26–255
number of AML msg call registers	20—the minimum of 25% of total call registers or 255, default 20				
call registers for CSL input queues	20—the minimum of 25% of total call registers or 255, default 20				

Table 123
Memory related parameters (Part 2 of 2)

Parameters	System type				
	21E	51	61	71	81
call registers for CSL/AML output queues	20—the minimum of 25% of total call registers or 255, default 20				
auxiliary input queue	20—the minimum of 25% of total call registers or 255, default 20				
auxiliary output queue	20—the minimum of 25% of total call registers of 255, default 20				
history file buffer length (characters)	0–65, 535	0–65, 535	0–65, 535	0–65, 535	0–65, 535
overlay cache memory blocks (19Kw segments)	2–32 or none	2–32 or none	2–32 or none	2–32 or none	N/A